

**Exhibit B**

**Wolfe Declaration**

Hearing Date: February 7, 2018 at 9:30 a.m. (Atlantic Standard Time)  
Objection Deadline: February 1, 2018 at 5:00 p.m. (Eastern Standard Time)

**UNITED STATES DISTRICT COURT  
DISTRICT OF PUERTO RICO**

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In re: PROMESA  
THE FINANCIAL OVERSIGHT AND Title III  
MANAGEMENT BOARD FOR PUERTO RICO, No. 17 BK 3283-LTS  
as representative of  
THE COMMONWEALTH OF PUERTO RICO, *et al.* (Jointly Administered)  
Debtors.<sup>1</sup>

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In re: PROMESA  
THE FINANCIAL OVERSIGHT AND Title III  
MANAGEMENT BOARD FOR PUERTO RICO, No. 17 BK 4780-LTS  
as representative of  
PUERTO RICO ELECTRIC POWER AUTHORITY  
("PREPA"), Court Filing Relates Only to PREPA  
Debtor. and Shall Only be Filed in Case No.  
17-BK-4780 (LTS)

-----X  
**DECLARATION OF ANDREW WOLFE IN SUPPORT OF  
URGENT MOTION OF DEBTOR PUERTO RICO ELECTRIC POWER  
AUTHORITY FOR ENTRY OF INTERIM AND FINAL ORDERS (A)  
AUTHORIZING POSTPETITION SECURED FINANCING, (B) GRANTING  
PRIMING LIENS AND PROVIDING SUPERPRIORITY ADMINISTRATIVE  
EXPENSE CLAIMS, (C) MODIFYING THE AUTOMATIC STAY, (D) SCHEDULING  
A FINAL HEARING, AND (E) GRANTING RELATED RELIEF**

Pursuant to 28 U.S.C. § 1746, I, Andrew Wolfe, hereby declare as follows under penalty  
of perjury under the laws of the United States of America:

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<sup>1</sup> The Debtors in these Title III Cases, along with each Debtor's respective Title III case number listed as a bankruptcy case number due to software limitations and the last four (4) digits of each Debtor's federal tax identification number, as applicable, are the (i) Commonwealth of Puerto Rico (Bankruptcy Case No. 17 BK 3283-LTS) (Last Four Digits of Federal Tax ID: 3481); (ii) Puerto Rico Sales Tax Financing Corporation ("COFINA") (Bankruptcy Case No. 17 BK 3284-LTS) (Last Four Digits of Federal Tax ID: 8474); (iii) Employees Retirement System of the Government of the Commonwealth of Puerto Rico ("ERS") (Bankruptcy Case No. 17 BK 3566-LTS) (Last Four Digits of Federal Tax ID: 9686); (iv) Puerto Rico Highways and Transportation Authority ("HTA") (Bankruptcy Case No. 17 BK 3567-LTS) (Last Four Digits of Federal Tax ID: 3808); and (v) Puerto Rico Electric Power Authority ("PREPA") (Bankruptcy Case No. 17 BK 4780 (LTS)) (Last Four Digits of Federal Tax ID: 3747).

1. I am an economic advisor to the Financial Oversight and Management Board for Puerto Rico (the “FOMB”), a Fiscal Consultant for the Inter-American Development Bank and an Adjunct Professorial Lecturer at both the School of International Service at American University in Washington, D.C. and the Baker Institute for Public Policy at Rice University in Houston, Texas. I make this declaration in support of the urgent motion of the Puerto Rico Electric Power Authority (“PREPA”) for authorization to obtain postpetition secured financing, granting the Government of Puerto Rico liens providing superpriority administrative expense claims, granting priming liens on certain collateral, and related relief. Except as otherwise stated, or where I present information from cited materials, I make this declaration based on my personal knowledge.

2. I have been asked by the FOMB, as the representative for the Commonwealth of Puerto Rico and PREPA pursuant to section 315 (b) of the Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”), to provide my opinions regarding the current macroeconomic situation in Puerto Rico following the devastation wrought by Hurricanes Irma and Maria and to consider the effects on Puerto Rico’s economy under a scenario wherein PREPA is forced to cease operations due to its current liquidity crisis. My opinion also includes an assessment of the impact that a cessation of PREPA’s operations would have on the viability of creditors’ purported collateral.

## **I. QUALIFICATIONS**

3. A copy of my curriculum vitae is attached as **Exhibit 1**. To avoid burdening the Court, I am not attaching copies of articles and other materials referenced in this declaration. However, I will provide copies of these materials upon request.

4. I have been retained as an advisor to the FOMB on a contract basis since November 17, 2016. As part of that engagement, I consulted (and continue to consult) with the FOMB on the certification of fiscal plans for the Government of Puerto Rico and its instrumentalities, including PREPA, and to evaluate the macroeconomic framework underlying such plans.

5. Two of my former colleagues at the International Monetary Fund (the “IMF”), Ranjit Teja and Anne Krueger, and I previously had been retained by the Government Development Bank of Puerto Rico (the “GDB”). Dr. Krueger is a distinguished economist and the former First Deputy Managing Director of the IMF. The GDB retained us in 2015 to complete an in-depth report on the macroeconomic condition of Puerto Rico. The resulting report that I co-authored with Drs. Krueger and Teja was entitled “Puerto Rico - A Way Forward” and is commonly referred to as the “Krueger Report.”<sup>2</sup> Our report addressed the economic and fiscal origins of Puerto Rico’s debt crisis and provided a roadmap for a potential path forward. In the Krueger Report, we concluded that the fiscal crisis in Puerto Rico had been building for decades, and we examined why prior efforts to head off that economic crisis were inadequate.

6. In addition to serving as the FOMB’s economic advisor, a fiscal consultant, and an educator, I worked at the IMF for 27 years. When I left the IMF in 2014, I was the Head of the IMF Human Resource Strategy Unit. Immediately before that, I was the Senior Personnel and Budget Manager of the Western Hemisphere Department. During my years at the IMF, I also acted as IMF Mission Chief to El Salvador, Colombia, the Dominican Republic, Uruguay

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<sup>2</sup> The Krueger Report and a July 13, 2015 update are available at, respectively, <http://www.gdb-pur.com/documents/PuertoRicoAWayForward.pdf> and <http://www.gdb-pur.com/documents/PuertoRicoReport-Update.pdf>.

and Peru, and was the IMF Resident Representative in Uruguay, Argentina, and Peru. My responsibilities in those positions included leading negotiations with those countries on IMF-supported programs, monitoring their fiscal deficits, and examining whether IMF financial and economic projections were being met. While at the IMF, and relevant to the issues here, I set policy reform agendas for lending programs in coordination with senior advisors at the IMF and senior financial officials for the governments in question. I also oversaw the IMF teams that monitored performance of the countries pursuant to such lending programs and determined whether the countries adhered to agreed-upon structural reforms and fiscal and monetary programs.

7. Among other specialties, and of particular relevance here, I am a macroeconomist. As a macroeconomist, I study how an aggregate economy works and analyze the impact of various factors, including changes in population, unemployment, the rate of growth, inflation, income and price levels. I was awarded a Ph.D. in Economics from the University of Wisconsin in 1985. In 1978, I received a B.S.E. in Economics and a B.A.S. in Engineering from the University of Pennsylvania.

## **II. OVERVIEW OF OPINIONS**

8. In an earlier declaration submitted to the Court in conjunction with the FOMB's opposition to lift the automatic stay to seek the appointment of a receiver at PREPA, I discussed and described the dire economic and financial condition of Puerto Rico and its instrumentalities.<sup>3</sup> Puerto Rico's already dire situation has been significantly compounded by the devastation

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<sup>3</sup> See *Declaration of Andrew Wolfe in Support of Opposition of the Financial Oversight and Management Board for Puerto Rico to the Motion of the Ad Hoc Group of PREPA Bondholders, National Public Finance Guaranty Municipal Corp., Assured Guaranty Corp., Assured Guaranty Municipal Corp., and Syncora Guarantee Inc. for Relief from the Automatic Stay to Allow Movants to Enforce their Statutory Right to Have a Receiver Appointed* [Case No. 17-4780, Docket No. 149-2] (the "Wolfe Receiver Declaration") at ¶¶ 48–59.

wrought by Hurricanes Irma and Maria. A deterioration spiral that had already taken hold of Puerto Rico's economy pre-hurricanes has been accelerated as a result of the economic contraction, decreased tax collections, and outmigration Puerto Rico is experiencing following the hurricanes. The situation is fragile, with restoration efforts still needed for much of Puerto Rico's infrastructure.

9. Amidst this precarious situation, if PREPA were to cease operating the island's electrical grid for any material period of time, the consequences to Puerto Rico's economy would be catastrophic and potentially irreversible. Simply put, a modern economy cannot operate without access to electricity. Entire industries that rely on electricity as a major input, such as manufacturing and tourism, would grind to a halt. While short-term solutions, such as relying on diesel-fuel generators, might be available to some of Puerto Rico's residents, such solutions would not meet Puerto Rico's power needs on a longer-term basis and would not be available to most residents. Under the unique challenges of operating in an environment without an electrical grid, numerous businesses would shutter completely and residents with no access to power would flee. The outcome would be an unprecedented economic contraction, resulting in a sharp acceleration in the exodus of population that would fundamentally alter the nature of Puerto Rico's already fragile economy.

10. Given the severe consequences of such an economic contraction, I believe it is apparent that all stakeholders would fare better if PREPA remains operable and electric services are restored as quickly as possible. Holders of PREPA's Power Revenue Bonds (the "Power Revenue Bondholders"), who, I understand, assert a secured position regarding the revenues of PREPA, would see the value of their collateral evaporate if PREPA stops operating because PREPA would no longer generate any revenues. And, even if PREPA were eventually to come

back online, the shuttering of businesses and outmigration that would have taken place in the intervening period would cut significantly into PREPA's customer base and thus its revenues.

11. Even aside from the Power Revenue Bondholders, bondholders who hold debt of the Government of Puerto Rico or guaranteed by the Government of Puerto Rico (the "GO Bondholders") would also fare significantly better by ensuring that PREPA does not cease operations. This is because a substantial drop in economic activity and loss of population that would result from a cessation of PREPA's operations, would, among other devastating consequences, cause lasting and precipitous declines in tax revenue collection and decimate Puerto Rico's ability to provide basic services to its citizens or service its debt.

### **III. RELEVANT FACTUAL BACKGROUND TO OPINIONS**

12. Based on my work, it is my belief that Puerto Rico and its instrumentalities were in a dire economic and fiscal condition prior to Hurricanes Irma and Maria. A structural economic decline that began in 2006 has continued essentially unabated ever since. Since 2007, Puerto Rico's real Gross National Product ("GNP") has declined by more than 14%. Real growth has been negative in each of the last ten years, except for 2012, when it reached only 0.5%.<sup>4</sup>

13. As the recession continued, Puerto Rico financed its fiscal deficits by issuing debt. According to the fiscal plan for Puerto Rico certified in March 2017, the total public-sector debt for Puerto Rico stood at \$73.810 billion, and unfunded pension obligations stood at

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<sup>4</sup> Statistical Appendix of the Economic Report for the Governor and Legislative Assembly, GDB, available at <http://www.gdb-pur.com/economy/statistical-appendix.html>. I use GNP instead of Gross Domestic Product ("GDP") because GNP is the measure of national income that best ties to the base for tax collections. Published data from the GDB provide measurements of real GNP in constant 1954 dollars.

approximately \$50 billion.<sup>5</sup> Of the approximately \$74 billion in debt, Puerto Rico has issued or guaranteed approximately \$17.8 billion in general obligation bond debt (the “GO Debt”).<sup>6</sup>

While the Board is in the process of considering a revised fiscal plan for Puerto Rico that takes into account the effects of the hurricanes, the outstanding public-sector debt described in the certified plan has not diminished.

14. Even before the hurricanes, Puerto Rico was already on the verge of being unable to provide its citizens with the most basic services, such as police and fire protection, education, electricity, sewer and water services, and medical care. As is evident from the PROMESA Title III petitions filed by the Government of Puerto Rico and some of its instrumentalities, Puerto Rico and its instrumentalities cannot pay their current operating expenses out of current revenues, much less service the debt burden they have accumulated. Indeed, the Government of Puerto Rico has declared a state of fiscal emergency, stating, among other things, that it lacks sufficient resources to protect the health, safety, and welfare of the people of Puerto Rico.<sup>7</sup> In addition, Puerto Rico is unable to refinance its debt because it no longer has access to the capital markets.

15. In my analysis, the issues that drove Puerto Rico into its preexisting economic and fiscal crisis include, among other factors, the loss of working-age population, the continued low level of Puerto Rico’s labor force participation rate, the trend decline in GNP, declining

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<sup>5</sup> The March 13, 2017 Commonwealth Fiscal Plan, with corrections, pp. 10, 16, *available at* <https://juntasupervision.pr.gov/wp-content/uploads/wpfd/50/58f614473f619.pdf>. (The FOMB’s Resolution certifying the Commonwealth Fiscal Plan as modified by the amendments set out in the Resolution is available at <https://juntasupervision.pr.gov/wpcontent/uploads/wpfd/50/58f614484710d.pdf>.)

<sup>6</sup> *Id.*

<sup>7</sup> *See* Act No. 21-2016 and Act No. 3-2017; *see also* PROMESA § 405(m).



socioeconomic conditions, and infrastructure deterioration.<sup>8</sup> Deterioration in these key economic trends will continue to spur out-migration, which in turn reduces demand for goods and services, weakens the incentive to invest on the island, and risks further economic contraction. So long as this “deterioration spiral” remains unabated, the prospects for Puerto Rico to regain access to capital markets are miniscule.

#### **A. Current Conditions In Puerto Rico**

16. The already fragile situation in Puerto Rico has been significantly compounded as a result of the damage wrought by Hurricanes Irma and Maria. Due to widespread home destruction, thousands of families have been displaced and are now living with other family members, have been indefinitely relocated to shelters, or have simply left the island altogether. In addition to wind damage, floodwaters have damaged dams,<sup>9</sup> impaired sanitary services,<sup>10</sup> endangered the potable water supply,<sup>11</sup> and increased the risks of tropical diseases (such as the dengue and Zika viruses),<sup>12</sup> mudslides,<sup>13</sup> and environmental contamination.<sup>14</sup>

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<sup>8</sup> Factual support illustrating these deteriorating economic trends can be found in the Wolfe Receiver Declaration ¶¶ 24-38 [Case No. 17-4780, Docket No. 149-2].

<sup>9</sup> *Thousands of Puerto Ricans Evacuated as Dam Threatens to Breach*, New Scientist, <https://www.newscientist.com/article/2148561-thousands-of-puerto-ricans-evacuated-as-dam-threatens-to-breach/> (last visited Jan 25, 2018).

<sup>10</sup> Jennifer Sciubba & Jeremy Youde, *Analysis | Puerto Rico's Troubles are Far from Over. The Population's Health is at Risk*, Washington Post (2017), [https://www.washingtonpost.com/news/monkey-cage/wp/2017/10/13/puerto-ricos-troubles-are-far-from-over-the-populations-health-is-at-risk/?utm\\_term=.015d22600717](https://www.washingtonpost.com/news/monkey-cage/wp/2017/10/13/puerto-ricos-troubles-are-far-from-over-the-populations-health-is-at-risk/?utm_term=.015d22600717) (last visited Jan 25, 2018).

<sup>11</sup> Veronica Rocha, *Nearly Half of Puerto Rico Still without Drinking Water* CNN (2017), <http://www.cnn.com/2017/09/28/us/puerto-rico-water-supply/index.html> (last visited Jan 25, 2018).

<sup>12</sup> See Daniella Silva, *Puerto Ricans at risk of waterborne disease outbreaks in wake of Hurricane Maria*, NBCNews.com (2017), <https://www.nbcnews.com/storyline/puerto-rico-crisis/puerto-ricans-risk-waterborne-disease-outbreaks-wake-hurricane-maria-n814461> (last visited Nov 1, 2017).

<sup>13</sup> *In One Puerto Rico Mountain Town, a Wall of Mud Came Crashing Down*, Los Angeles Times, <http://www.latimes.com/nation/la-na-puerto-rico-landslide-20170924-story.html> (last visited Jan 25, 2018).

17. Puerto Rico's key infrastructure systems have also suffered critical damage. According to PREPA officials, PREPA is currently unable to provide electric power to 45%<sup>15</sup> of its customers and, for some time after Hurricane Maria first struck, the entire PREPA electric system was inoperable.<sup>16</sup> The Puerto Rico Aqueduct and Sewer Authority ("PRASA"), which provides water and sewer service to the island, also suffered substantial damage, at one stage rendering 1 million residents without potable water.<sup>17</sup> Economic activity suffered as roads and bridges collapsed or became unpassable due to debris and mudslides. The health, education, and social infrastructure were also severely impacted—for some time after the hurricanes hit, most hospitals were working on generator power<sup>18</sup> and more than 1,000 schools were closed.<sup>19</sup>

#### IV. ANALYSIS AND OPINIONS

18. Puerto Rico's post-disaster economic situation is daunting. It is clear to me that, even as Puerto Rico continues its disaster recovery efforts, the effects of the hurricanes will reverberate throughout Puerto Rico's economy for some time. Key factors that drove the deterioration spiral pre-disaster (such as outmigration, loss of tax revenues due to economic contraction, infrastructure deterioration, and declining socioeconomic conditions) have been

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<sup>14</sup> Vann R. Newkirk II, *Puerto Rico's Environmental Catastrophe* The Atlantic (2017), <https://www.theatlantic.com/politics/archive/2017/10/an-unsustainable-island/543207/> (last visited Jan 25, 2018).

<sup>15</sup> See Declaration of Todd W. Filsinger, filed concurrently herewith.

<sup>16</sup> According to Department of Energy reports, for eight days after the storm, the estimate was that 100% of the island was without power.

<sup>17</sup> *Puerto Rico: 1 million Americans without drinking water*, John Sutter, <http://www.cnn.com/2017/10/18/health/puerto-rico-one-month-without-water/index.html> (last visited October 18, 2017).

<sup>18</sup> Puerto Rican hospitals are still desperate for fuel, generators, and cash, VICE News, [https://news.vice.com/en\\_us/article/evamjj/puerto-rican-hospitals-are-still-desperate-for-fuel-generators-and-cash](https://news.vice.com/en_us/article/evamjj/puerto-rican-hospitals-are-still-desperate-for-fuel-generators-and-cash) (last visited Jan 25, 2018).

<sup>19</sup> Ralph Ellis, *Puerto Rico schools may not reopen for weeks* CNN (2017), <http://www.cnn.com/2017/10/01/us/puerto-rico-schools-closed-for-weeks/index.html> (last visited Jan 25, 2018).

significantly exacerbated by the hurricanes. The need to counteract these trends is more important than ever.

19. For example, even when *not* accounting for a prolonged shutdown in access to power, the Climate Impact Lab, based on an analysis and database of over 13,000 cyclone events since 1950,<sup>20</sup> projected through its model that Puerto Rico's population would decline by 10%, or approximately 350,000 people, through the end of FY2019.<sup>21</sup> Post-hurricane demographic projections calculated by Lyman Stone, an expert in demography, presently predict a population decline of 7.7% in FY2018 when GNP declines by a projected 11-12%.<sup>22</sup> In my economic model, which incorporates Mr. Stone's projections, I currently estimate that the combined circumstances of the destruction of homes, displacement of families, and devastation of key infrastructure, without accounting for a prolonged shutdown of PREPA, would contribute to emigration rates accelerating to some 255,000 persons in FY2018 (7.7% of the population) and another 62,000 in FY2019 (2.0% of the population). At this time, a cumulative decline of just under 20% in population is expected over five years.

20. The precipitous decline in real economic growth in FY 2018 is consistent with the Climate Impact Lab's analysis, whereby Hurricane Maria was a cyclone of such magnitude that it wiped out roughly a week's worth of economic developments for every sixty seconds that Puerto Rico suffered through the storm. This projection considers data of the worst impacts of

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<sup>20</sup> The Climate Impact Lab is a collaboration of more than 20 climate scientists, economists, computational experts, and researchers from the University of California, Berkeley, the Energy Policy Institute at the University of Chicago (EPIC), Rhodium Group, and Rutgers University.

<sup>21</sup> In another study conducted by Hunter College's Center for Puerto Rican Studies, Edwin Meléndez and Jennifer Hinojosa estimate that from 2017 to 2019, Puerto Rico may lose up to 470,335 residents or 14% of the population. *See Edwin Meléndez & Jennifer Hinojosa, Estimates Of Post-Hurricane Maria Exodus From Puerto Rico* (2017).

<sup>22</sup> *Cresting the Wave: Puerto Rico's Once and Future Population Decline*. Lyman Stone presented his projected in the First FOMB listening session held on November 16, 2017.

the 1997 Asian Financial Crisis (on Thailand and Indonesia) and the hardest hit states during the Global Financial Crisis of 2008-09. Without aggressive recovery efforts, Climate Impact Lab projects that it would take Puerto Ricans 26 years just to return to pre-hurricane income levels.<sup>23</sup> If the situation is not dealt with quickly, the projected economic contraction would be amplified and prolonged such that it could cause irreparable harm—potentially pushing the economy past the point of return.

#### **A. Effect of PREPA Ceasing Operations**

21. Amidst Puerto Rico's deteriorating economic situation, if PREPA were to cease operating the island's electrical grid for any material period of time, the consequences to Puerto Rico's economy would be catastrophic and potentially irreversible.

22. A modern economy cannot operate without access to electricity. In the absence of access to electricity, Puerto Rico's industries would primarily have to rely on generators running on diesel fuel. Diesel-run generators are used by many businesses on the island to deal with the uncertain supply of power owing to the periodic but short outages that plague the island. These backup generators are not designed for longer-term energy supply, as witnessed by the fact that no firm uses generators as a primary source of power. Accordingly, the cost of running on diesel fuel will be prohibitively high for numerous businesses, particularly those in industries that are sensitive to energy costs.<sup>24</sup> For example, in the tourism sector, which accounts for approximately 6% of Puerto Rico's GNP, energy is the second biggest financial factor in the

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<sup>23</sup> See *The Mind-bending and Heart-breaking Economics of Hurricane Maria*, *Climate Impact Blog* (2017), <http://www.impactlab.org/insights/the-mind-bending-and-heart-breaking-economics-of-hurricane-maria/> (last visited Oct 23, 2017).

<sup>24</sup> At \$3 per gallon for diesel, even the smallest generator would cost \$1.8 per kilowatt-hour ("kWh"). As set out in PREPA's fiscal plan, certified in May 2017, PREPA charges \$0.198 per kWh. See Approximate Diesel Fuel Consumption Chart, Diesel Service & Supply, [http://www.dieselserviceandsupply.com/Diesel\\_Fuel\\_Consumption.aspx](http://www.dieselserviceandsupply.com/Diesel_Fuel_Consumption.aspx) (last visited Jan 25, 2018).

operational budget behind the cost of labor.<sup>25</sup> Not only is diesel a far more expensive energy source under ordinary circumstances, if PREPA ceased its operation, the corresponding increase in demand for diesel fuel and the logistical difficulties associated with importing and transporting sufficient diesel fuel to satisfy the demand would be expected to cause the price of diesel to rise significantly. Under such circumstances, it is likely that numerous hotels would shutter operations entirely.

23. A similar analysis would apply to many of the island's manufacturers, including the power-intensive pharmaceutical factories that require 24-hour refrigeration of many of their products. In short, if PREPA were to experience prolonged downtime, Puerto Rico's manufacturing industry, which accounts for approximately 50% of Puerto Rico's GNP,<sup>26</sup> would be devastated. Should manufacturers leave the island or shut down operations, a substantial part of Puerto Rico's economy would be wiped out. The damage would not be isolated to the manufacturing industry, as the increased cost of doing business would be borne by businesses across the island and many will likely find it uneconomical to continue operating. The Government of Puerto Rico itself would face increased costs in operating utilities and providing basic services, even as people continued to leave the island and the tax base dwindled.

24. According to my analysis, if power were to go offline for three months, real activity for FY2018 would decline by a projected 15% and another 8% in FY2019. To give

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<sup>25</sup> See, e.g., Robert Mandelbaum, An examination of hotel labor costs, *Hotel Management* (Nov. 21, 2016, 11:53 AM), <http://www.hotelmanagement.net/operate/examination-hotel-laborcosts> (2015 study results indicating that operating expenses are the second highest factor for hotel expenses); Robert Mandelbaum, Consumption and Pricing Influence Hotel Utility Costs, CBRE HOTELS, <http://www.cbrehotels.com/EN/Research/Pages/Consumption-and-PricingInfluence-Hotel-Utility-Costs.aspx> (last visited July 25, 2017) (electricity is the largest utility expense comprising 60 percent of total utility expenses for U.S. lodging industry).

<sup>26</sup> In 2012, manufacturing accounted for approximately \$43 billion of Puerto Rico's \$88 billion in GDP. See Net National Income by Major Industrial Sector, Government Development Bank for Puerto Rico, <http://www.gdb-pur.com/economy/statistical-appendix.html>

empirical backing for a projected loss of income, I follow an analysis done on the cost of lost economic activity owing to a loss of power per day during an Italian power outage. The authors found a daily cost of lost economic activity of 0.083% of GDP. On an annual basis, with a three-month outage, this would translate into a loss of GNP in Puerto Rico of 15% in FY2018.<sup>27</sup> In the event of a six-month outage, my analysis projects a 20% decline in real economic growth in FY2018 and another 9% decline in FY2019. Moreover, this is likely to be a low-end estimate as such a long-term outage is likely to be associated with non-measured, longer-term behaviors that would accelerate business closures and outmigration as the outage continues.

25. The consequences of a GNP contraction on this scale would be felt for decades to come and would fundamentally alter the economic makeup of the island, even if the electric grid were to be reactivated thereafter. In the scenario of a three-month outage, the 15% contraction in GNP in FY2018 and another 8% in FY2019, as projected by my model, would lead to the large exodus that greatly outpaces the already alarming rate of outmigration. Projecting out Mr. Stone's present demographic calculations and incorporating them into my model, I forecast that a three-month outage would result in a loss of 300,000 persons in FY2018 and an additional 220,000 in FY 2019. By FY2022, 25% of the population (880,000) would have left the island. In the case of a six-month outage, my analysis predicts a loss of 365,000 persons in FY2018 and an additional 250,000 in FY2019, with a cumulative loss of 30% (1,000,000) of the population by FY2022.

26. The consequences of this staggering loss of population are incalculable. Among other things, this exodus would lead to a substantially lower tax base, loss of customers for existing businesses, and an erosion of faith in Puerto Rico as a stable environment to conduct

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<sup>27</sup> "Schmidthaler, M. and Reichl, J. "Assessing the Socio-Economic Effects of Power Outages Ad Hoc", Computer Science Research Development, (2016) 31: 157-161.

business. Turning the lights back on in three months or six months would not suddenly bring back the people or businesses that left the island.

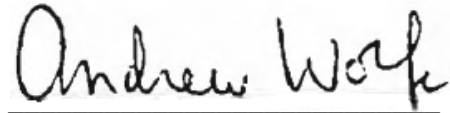
**B. All Stakeholders Benefit from an Operational PREPA**

27. Given the dire consequences of such an economic contraction, it is apparent that all stakeholders will fare better if PREPA remains operable, brings back power as soon as possible to all of the island, and is modernized going forward. The Power Revenue Bondholders, who assert a secured position regarding revenues of PREPA, will see the value of their collateral evaporate if PREPA stops operating and no longer generates revenues. Even if PREPA were eventually to come back online, the shuttering of businesses and outmigration that would have taken place in the intervening period would cut significantly into PREPA's customer base.

28. The Puerto Rico's bondholders will also fare significantly better by ensuring that PREPA does not cease operations. The substantial drop in economic activity and loss of population, among other devastating consequences, would cause lasting and precipitous declines in tax revenue collection. In the short term, the Government of Puerto Rico's ability to provide basic services will be substantially affected by the rising costs associated with using diesel fuel. The capacity, if any, of the Government of Puerto Rico to generate sufficient tax revenues to provide basic services and to service its debt would be further imperiled. Even though the funds for PREPA's postpetition financing would come from the Government of Puerto Rico, the amounts extended (before even considering repayment and interest) pale in comparison to the havoc PREPA's shutdown would wreak on Puerto Rico's economy and tax collections.

I declare under penalty of perjury under 28 U.S.C. § 1746 that the foregoing is true and correct.

Executed on January, 27 2018

A handwritten signature in black ink that reads "Andrew Wolfe". The signature is written in a cursive style with a large initial 'A' and a stylized 'W'.

Andrew Wolfe



**Exhibit 1**

**Curriculum Vitae of Andrew Wolfe**

## CURRICULUM VITAE

**Andrew M. Wolfe**  
**2634 Starboard Point Drive**  
**Houston, TX 77054**

**NATIONAL OF:** United States

### CURRENT POSITIONS:

Adjunct Professorial Lecturer, American and Rice Universities  
Fiscal Consultant for the Inter-American Development Bank  
Economic Advisor to the Puerto Rico Financial Oversight and Management Board

### EDUCATION:

1978	B.S.E., Economics, University of Pennsylvania
1978	B.A.S., Engineering, University of Pennsylvania
1985	Ph.D., Economics, University of Wisconsin

### LANGUAGES:

English-Native  
Spanish-Fluent

### UNIVERSITY EXPERIENCE:

2017 –present	Rice University, Adjunct Faculty in the James Baker School of Public Policy
2013- present	American University, Adjunct Faculty in the School of International Studies
1983- 1986	Bowdoin College, Assistant Professor

### IMF CAREER:

1987-1992	Economist, Western Hemisphere Department (WHD)
1992-1995	Resident Representative, Uruguay (1992-95) and Argentina (1994-95)
1995-1997	Senior Economist, Fiscal Affairs Department
1997-2000	Resident Representative, Peru
2001-2002	IMF Mission Chief, Peru
2002-2005	IMF Mission Chief, Uruguay
2005-2006	Senior Resident Representative, Argentina
2006-2009	IMF Mission Chief, Dominican Republic
2009-2011	IMF Mission Chief, El Salvador and Colombia
2011-2014	Senior Personnel and Budget Manager, WHD, Head of IMF Human Resource Strategy Unit

### PUBLICATIONS:

"Fiscal Accounting of Bank Restructuring". With James Daniel and Jeffrey Davis. IMF Paper on Policy Analysis and Assessment (PPAA/97/5), 1997.

"Las Orígenes, las Políticas, la Recuperación, y las Lecciones Aprendidas". Uruguay: Qué Aprendimos de la Crisis Financiera de 2002?. World Bank (May 29, 2007).

"A Primer on Currency Unification and Exchange Rate Policy in Cuba: Lessons from Exchange Rate Unification in Transition Economies". Co-author with Gabriel DiBella (IMF), Presented at the 2009 American Economics Association Meetings.

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